

**WHAT IS CLAIMED IS:**

1. A method comprising:

using a logic design element in a logic design;

performing a simulation of the logic design that includes

5 simulating the logic design element; and

having the logic design element automatically collect  
instrumentation data during the simulation, wherein the  
instrumentation data relate to the logic design element.

10 2. The method of claim 1 further comprising displaying the  
instrumentation data relating to the logic design element.

15 3. The method of claim 2 further comprising receiving a  
query to display the instrumentation data relating to the  
logic design element, wherein displaying the instrumentation  
data includes displaying the instrumentation data relating to  
the logic design element in response to the query.

20 4. The method of claim 2 wherein displaying the  
instrumentation data includes displaying the instrumentation  
data after performing the simulation.

5. The method of claim 2 wherein displaying the instrumentation data includes displaying the instrumentation data while performing the simulation.

5 6. The method of claim 2 wherein:

performing the simulation includes performing a partial simulation,

having the logic design element automatically collect the instrumentation data includes having the logic design element automatically collect the instrumentation data during the partial simulation, and

displaying the instrumentation data includes displaying the instrumentation data after performing the partial simulation.

15 7. The method of claim 1 wherein:

the logic design element includes a FIFO memory, and

having the logic design element automatically collect the instrumentation data includes having the FIFO memory automatically collect the instrumentation data during the simulation, with the instrumentation data relating to the FIFO memory.

8. The method of claim 7 wherein having the FIFO memory automatically collect the instrumentation data includes having the FIFO memory record usage of the FIFO memory during the simulation.

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9. The method of claim 7 further comprising:  
receiving a query to display the instrumentation data relating to the FIFO memory, and  
displaying the instrumentation data relating to the FIFO memory in response to the query.

10 10. The method of claim 1 wherein:

the logic design element includes a tri-state bus, and  
having the logic design element automatically collect the instrumentation data includes having the tri-state bus automatically collect the instrumentation data during the simulation, with the instrumentation data relating to the tri-state bus.

15 20 11. The method of claim 10 wherein having the tri-state bus automatically collect the instrumentation data includes having the tri-state bus automatically collect usage of the tri-state bus during the simulation.

12. The method of claim 10 further comprising:

receiving a query to display the instrumentation data  
relating to the tri-state bus, and  
displaying the instrumentation data relating to the tri-  
5 state bus in response to the query.

13. A machine-accessible medium, which when accessed results  
in a machine performing operations comprising:

10 using a logic design element in a logic design;  
performing a simulation of the logic design that includes  
simulating the logic design element; and  
having the logic design element automatically collect  
instrumentation data during the simulation, wherein the  
instrumentation data relate to the logic design element.

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14. The machine-accessible medium of claim 13 further  
comprising displaying the instrumentation data relating to the  
logic design element.

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15. The machine-accessible medium of claim 14 further  
comprising receiving a query to display the instrumentation  
data relating to the logic design element, wherein displaying  
the instrumentation data includes displaying the

instrumentation data relating to the logic design element in response to the query.

16. The machine-accessible medium of claim 14 wherein  
5 displaying the instrumentation data includes displaying the instrumentation data after performing the simulation.

17. The machine-accessible medium of claim 14 wherein  
displaying the instrumentation data includes displaying the instrumentation data while performing the simulation.

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18. The machine-accessible medium of claim 14 wherein:  
performing the simulation includes performing a partial simulation,  
15 having the logic design element automatically collect the instrumentation data includes having the logic design element automatically collect the instrumentation data during the partial simulation, and  
displaying the instrumentation data includes displaying the instrumentation data after performing the partial simulation.

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19. The machine-accessible medium of claim 13 wherein:  
the logic design element includes a FIFO memory, and

having the logic design element automatically collect the instrumentation data includes having the FIFO memory automatically collect the instrumentation data during the simulation, with the instrumentation data relating to the FIFO

5 memory.

20. The machine-accessible medium of claim 19 wherein having the FIFO memory automatically collect the instrumentation data includes having the FIFO memory record usage of the FIFO memory during the simulation.

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21. The machine-accessible medium of claim 19 further comprising:

15 receiving a query to display the instrumentation data relating to the FIFO memory, and displaying the instrumentation data relating to the FIFO memory in response to the query.

22. The machine-accessible medium of claim 13 wherein:  
20 the logic design element includes a tri-state bus, and having the logic design element automatically collect the instrumentation data includes having the tri-state bus automatically collect instrumentation data during the

simulation, with the instrumentation data relating to the tri-state bus.

23. The machine-accessible medium of claim 22 wherein having  
5 the tri-state bus automatically collect the instrumentation  
data includes having the tri-state bus automatically collect  
usage of the tri-state bus during the simulation.

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24. The machine-accessible medium of claim 22 further  
comprising:

receiving a query to display the instrumentation data  
relating to the tri-state bus, and

displaying the instrumentation data relating to the tri-state bus in response to the query.

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25. An apparatus comprising:

a simulation module that is structured and arranged to  
perform a simulation of a logic design that includes a logic  
design element; and

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a collection module that is integrated with the logic  
design element and that is structured and arranged to  
automatically collect instrumentation data relating to the  
logic design element during the simulation.

26. The apparatus of claim 25 further comprising a display module that is structured and arranged to display the instrumentation data relating to the logic design element.

5 27. The apparatus of claim 26 further comprising an interface module that is structured and arranged to receive a query to display the instrumentation data relating to the design element, wherein the display module is structured and arranged to display the instrumentation data relating to the logic design element in response to the query.

10 28. The apparatus of claim 25 wherein:

15 the logic design element includes a FIFO memory, and the collection module is integrated with the FIFO memory and is structured and arranged to automatically collect the instrumentation data relating to the FIFO memory during the simulation.

20 29. The apparatus of claim 25 wherein:

the logic design element includes a tri-state bus, and the collection module is integrated with the tri-state bus and is structured and arranged to automatically collect the instrumentation data relating to the tri-state bus during the simulation.